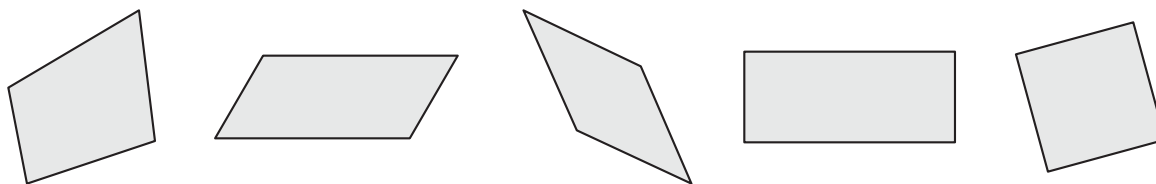


Exploring Quadrilaterals



Use Sketchpad to explore some properties of quadrilaterals.

1. Open the sketch **Quads.gsp** and go to the page “Square.”
2. Follow the instructions in the sketch. As you drag the figure, answer the following questions.
 - a. How are the lengths of the sides related? _____
 - b. How are the measures of the angles related? _____

Answer *sometimes*, *always*, or *never* for each statement about any square.

 - c. A pair of opposite sides are parallel. _____
 - d. Both pairs of opposite sides are parallel. _____
 - e. All angles are right angles. _____
3. Go to the page “Rhombus.”
4. Follow the instructions in the sketch. As you drag the figure, answer the following questions.
 - a. How are the lengths of the sides related? _____
 - b. How are the measures of the angles related? _____

Answer *sometimes*, *always*, or *never* for each statement about any rhombus.

 - c. A pair of opposite sides are parallel. _____
 - d. Both pairs of opposite sides are parallel. _____
 - e. A pair of opposite angles are congruent. _____
 - f. Both pairs of opposite angles are congruent. _____
 - g. A rhombus is a square. _____
 - h. A square is a rhombus. _____
5. Go to the page “Rectangle.”

6. Follow the instructions in the sketch. As you drag the figure, answer the following questions.

- a. How are the lengths of the sides related? _____
- b. How are the measures of the angles related? _____

Answer *sometimes*, *always*, or *never* for each statement about any rectangle.

- c. A pair of opposite sides are parallel. _____
- d. Both pairs of opposite sides are parallel. _____
- e. All angles are right angles. _____
- f. A rectangle is a square. _____
- g. A square is a rectangle. _____
- h. A rhombus is a rectangle. _____

7. Go to the page "Parallelogram."

8. Follow the instructions in the sketch. As you drag the figure, answer the following questions.

- a. How are the lengths of the sides related? _____
- b. How are the measures of the angles related? _____

Answer *sometimes*, *always*, or *never* for each statement about any parallelogram.

- c. A pair of opposite sides are parallel. _____
- d. Both pairs of opposite sides are parallel. _____
- e. A pair of opposite angles are congruent. _____
- f. A parallelogram is a rectangle. _____
- g. A rhombus is a parallelogram. _____
- h. A square is a parallelogram. _____

9. Go to the page "Trapezoid."

10. Follow the instructions in the sketch. As you drag the figure, answer the following questions.

- a. How are the lengths of the sides related? _____
- b. How are the measures of the angles related? _____
- c. Can you drag the trapezoid so that one pair of opposite sides is congruent?

- d. If the answer to question 10c is yes, are two angles formed in the trapezoid congruent? _____

- e. Can you drag the figure so that the trapezoid becomes a parallelogram?

Answer *sometimes*, *always*, or *never* for each statement about any trapezoid.

f. One pair of opposite sides is parallel. _____

g. Both pairs of opposite sides are parallel. _____

11. Go to the page “Quadrilateral.”

12. Follow the instructions in the sketch. As you drag the figure, answer the following questions.

a. Are any side lengths always equal? _____

b. Are any angle measures always equal? _____

c. What characteristic(s) apply to *all* quadrilaterals? _____
